



BRIEF REPORT

Introduction of the Republic of Korea—the United States of America's Joint Exercise Against Biothreats in 2013: Able Response 13

Seong Sun Kim ^{a,1,*}, Dong Whan Oh ^{b,1}, Hyun Jung Jo ^a, Chaeshin Chu ^c

^a*Division of Bioterrorism Preparedness & Response, Korea Centers for Disease Control and Prevention, Osong, Korea.*

^b*Korea Arms Verification Agency, Ministry of National Defense, Seoul, Korea.*

^c*Division of Epidemic Intelligence Service, Korea Centers for Disease Control and Prevention, Osong, Korea.*

Received: August 6, 2013
Revised: September 4, 2013
Accepted: September 6, 2013

KEYWORDS:

biothreat,
functional exercise,
Korea,
the United States of
America

Abstract

The Republic of Korea (ROK) and the the United States of America (USA) has held joint exercises to respond to biothreats in the Korean Peninsula since 2011. The exercise was called Able Response (AR) and it aims to coordinate interministerial procedures inside Korea and international procedures in requesting the medical resources urgently between ROK and USA, and among ROK and the United Nations, and nongovernmental organizations. AR13 was a functional exercise with a scenario that presumed a series of attack by terrorists, dispersing *Bacillus anthracis* in Seoul. The participants conducted exercises with action cells and using point-to-point communication system. It was followed by Senior Leadership Seminar participated by high-ranking officials in ROK and USA to discuss possible collaboration in advance. AR and its following actions will fortify collaboration between ROK and USA and enhance the capability of countermeasures against biothreats in Korea.

1. Introduction

Since 2001's anthrax bioterrorism in the USA, no large-scale case has been reported in the world. However, the possibility of bioterrorism still exists with the rapid development of technology and rapid change in international relations. As in Defense Whitepaper in the

Ministry of National Defense (MND) of the Republic of Korea (ROK), North Korea's armed forces are capable of carrying out 13 kinds of viral and bacterial attacks, so that the Korean Peninsula is exposed to a higher risk of bioattack than any other region in the world [1]. A biothreat in the Korean Peninsula could damage not only Koreans but also foreigners including the US army

*Corresponding author.

E-mail: sskim0719@korea.kr

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¹These authors contribute equally to this paper.

Table 1. Summary of Able Response Exercise 2013

	Details
Type	Functional Exercise and High Ranking Official Seminar
Dates	June 19–21, 2013
Venue	Korea Institute of Defense Analyses
Hosts	(ROK) Ministry of National Defense, Korea Centers Disease Control and Prevention (USA) Department of Defense, Department of Health and Human Services
Participants	230 participants from ROK and USA (including Australian observers) (ROK) President Office, Ministry of Security and Public Administration, National Emergency Management Agency, National Police Agency, Ministry of Foreign Affairs, National Intelligence Service, Ministry of Agriculture, Food and Rural Affairs, Ministry of Food and Drug Safety, Seoul Metropolitan City (USA) White House, Department of States, US Embassy to Korea, Department of Justice, FBI, Department of Homeland Security, Federal Emergency Management Agency
Scenario	<i>Bacillus anthracis</i> dispersed by terrorists

located in Korea. Supposing person-to-person pathogens are used in the bioattack, casualties would be expected in the US army without direct assault on the camps. Therefore, it is necessary to construct a system of preparedness to respond collaboratively to the biothreat by the ROK army, ROK government, and US army in Korea.

In this regard, the Department of Defense (DOD) in the USA proposed a joint exercise against biothreat to ROK government in 2010. The first joint exercise, or Able Response (AR) Exercise was conducted in May 2011 and it has been held annually since then. AR supposes biothreats in the Korean Peninsula and considers effective countermeasures by military and government along with civil sectors, and discusses surveillance of biothreat agents, diagnosis, forensic medicine, information sharing, operation plan, and policy making, so that it helps to develop better methods [2–8].

Participants and high-ranking officials evaluated the exercise very successful in that it enhances the security against biothreats not only in Korea but also internationally. High-ranking officials in both countries

cooperated to solve complicated problems. Related ministries and agencies including the President Office participated, so that social issues were dealt with as well as public issues. No previous exercise on biothreats was conducted between the two countries, although there were joint-military exercises between them.

2. Materials and Methods

2.1. Summary of exercise

AR 13 was a functional exercise on biothreats held from June 19, 2013 to June 20, 2013. A senior Leadership Seminar was held on June 21, 2013 to discuss responses of multiple ministries and agencies and improvement among high-ranking officials in both countries. This exercise was cohosted by the MND and Ministry of Health and Welfare, and their counterparts in the USA, the DOD, and Department of Health and Human Services. The exercise directors were the Director of Center for Infectious Disease Control in Korea Centers for Disease Control and Prevention, and the Director of Korea Arms Verification Agency in the



Figure 1. Participants of Able Response 13 Exercise.

Table 2. Goals of Able Response exercise 13

- (1) To understand each country's response procedure and examine the appropriateness
 - A Inter-ministerial and international information sharing and collaboration both inside ROK and in ROK–USA
 - B Collaboration of ROK–USA in strategic communication and risk communication in responding biothreats
- (2) To identify effectiveness of interministerial/international collaboration by examining each ministry/agency's in ROK procedure (e.g. SOP, MOA, MOU, manuals) and ROK–USA governments, US Forces Korea, allied countries and nongovernmental organizations
- (3) To examine the collaboration procedures to request medical resources in responding biothreats among agencies in ROK and in USA, UN, and nongovernmental organizations
- (4) To identify biosurveillance, sensor, other capabilities of ROK–USA and to share information and promote ROK–USA joint response

MOA = Memorandum of Agreements, MOU = Memorandum of Understanding, ROK = Republic of Korea, SOP = Standard Operation Procedure, UN = United Nations, USA = United States of America.

Ministry of National Defense. Furthermore, 10 related ministries and agencies participated, including the President's Office, National Intelligence Service, National Police Agency, and National Environmental Management Agency (Table 1, Figure 1). AR 13's scenario was composed of a series of bioattacks in Seoul, and the ministries and agencies of both countries collaborated with the others in responding to the attack [9].

AR 13 aimed to conduct a comprehensive procedure of crisis response in both countries and find strength and weakness in information sharing, strategic communication, biosurveillance, and the plan to transfer materials urgently to Korea (Table 2) [10–13].

2.2. Design of the exercise

This exercise was conducted for 12 hours from June 19, 2013 to June 20, 2013. However, the scenario

**Figure 2.** Able Response Exercise 13 functional exercise.

presumed 15 days and ROK–USA participating agencies' opinions are considered in Master Scenario Events List (MSEL), which was distributed on the exercise site. Participants responded to MSEL with their own response plans. Scenario and individual event were used as tools for exercise evaluation and problem shooting.

AR 11 and AR 12 were tabletop exercises, in which facilitators proposed problems and participants solved those through discussion. Topics were presented under virtual scenarios and participants were divided into several groups and identified their roles and responsibilities and conducted their responses. AR 13 was a functional exercise to be more realistic (Figure 2). This aimed to exercise and evaluate by function and role. For example, to exercise the information sharing, each ministry and agency shared information and evaluated strengths and weakness of the procedures [14].

Because this type of exercise was introduced for the first time in AR13, it might have appeared complicated to the participants and facilitators, so each participant's role was specified by designating them into one of Player Cell, Control Cell, Evaluation Cell, Simulator Cell, Administration, and Logistic Cell. Players conducted their own agencies' roles and responded. Control controlled the exercise and distributed the scenario and messages. Evaluation evaluated each agency's response and recorded. Simulator conducted the role of nonparticipating agency's role and Logistic supported materials and logistics (Figure 3).

The venue was Korea Institute of Defense Analyses (KIDA), but the participants were presumed to be in their own agencies. Two buildings in KIDA held three parties, or exercise control units, ROK participants, USA participants, and they were connected by intranet system enabling point-to-point communication (Figure 4).

2.3. Scenario

The pathogens used in AR 11 were anthrax and hemorrhagic fever with renal syndrome virus and tularemia virus in AR 12 [11]. In AR 13, two terrorist attacks with *Bacillus anthracis* were simulated (Figures 5 and 6).

The first attack (Phase 1) was identified by reports of suspected cases from a university hospital and an army hospital in Seoul. Epidemiological investigation revealed a common factor in that the cases had lodged in Hotel A in Seoul, in particular, all the military officers who had participated in a ROK-US Defense Symposium. After identification of *Bacillus anthracis* from the specimens of suspected cases, the investigation was proceeding when the second attack occurred.

The second attack (Phase 2) was reported by a resident witnessing dispersion of suspicious white powder from the top of a high-story building by a few men. A biosurveillance vehicle and Joint Portal Shield (JPS) in US Forces Korea identified abnormal signs and a response team was dispatched to the site.

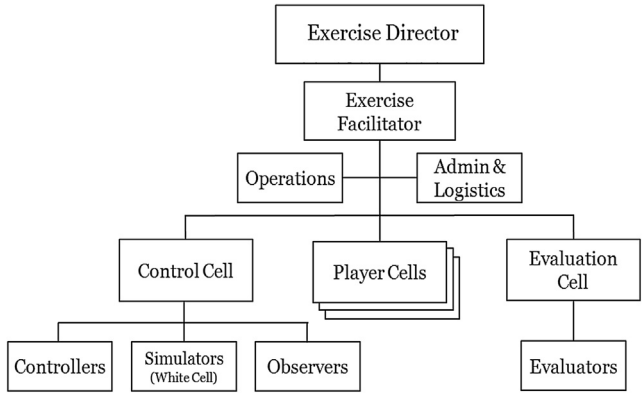


Figure 3. Able Response Exercise 13 organization structure



Figure 4. Response teams in Able Response Exercise 13.

The scenario presumed 15 days and two attacks with an 8-day interval causing 2700 patients and 1730 casualties including ROK & US soldiers and citizens, and foreigners. This scenario focused on ROK–USA collaborated risk communication to the general public, information sharing, and support requesting procedures [12,15].

The situation came to a severe national disaster (Phase 3) and a part of Seoul Metropolitan city was isolated and decontamination was conducted for more

than 6 months. This brought up a burden in national resources and the city was stumbled, so that related ministries and agencies came to discuss not only public health matters but also general social issues.

3. Results

The results were proposed by the participants and were presented in the Senior Leadership Seminar on the last day of the exercise (Figure 7).

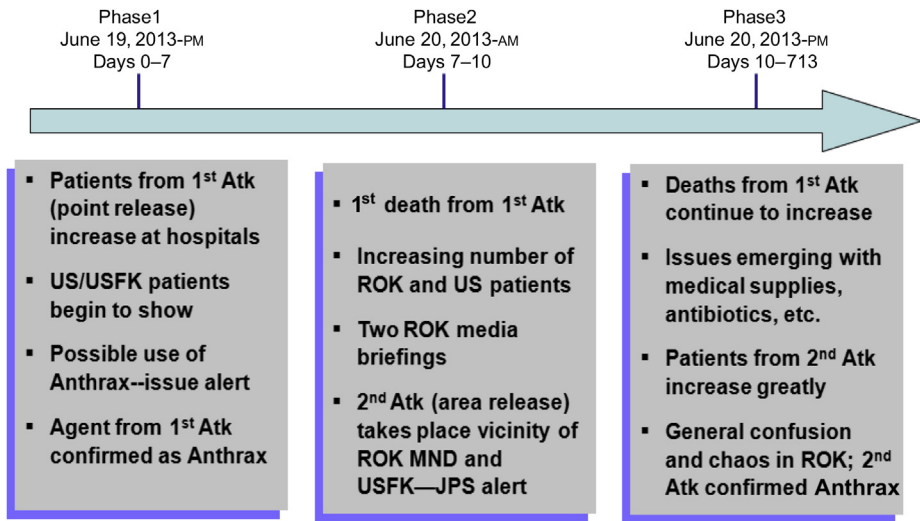


Figure 5. Scenario by phase. Atk = attack; JPS = Joint Portal Shield; MND = Ministry of National Defense; ROK = Republic of Korea; USFK = Untied States Forces Korea.

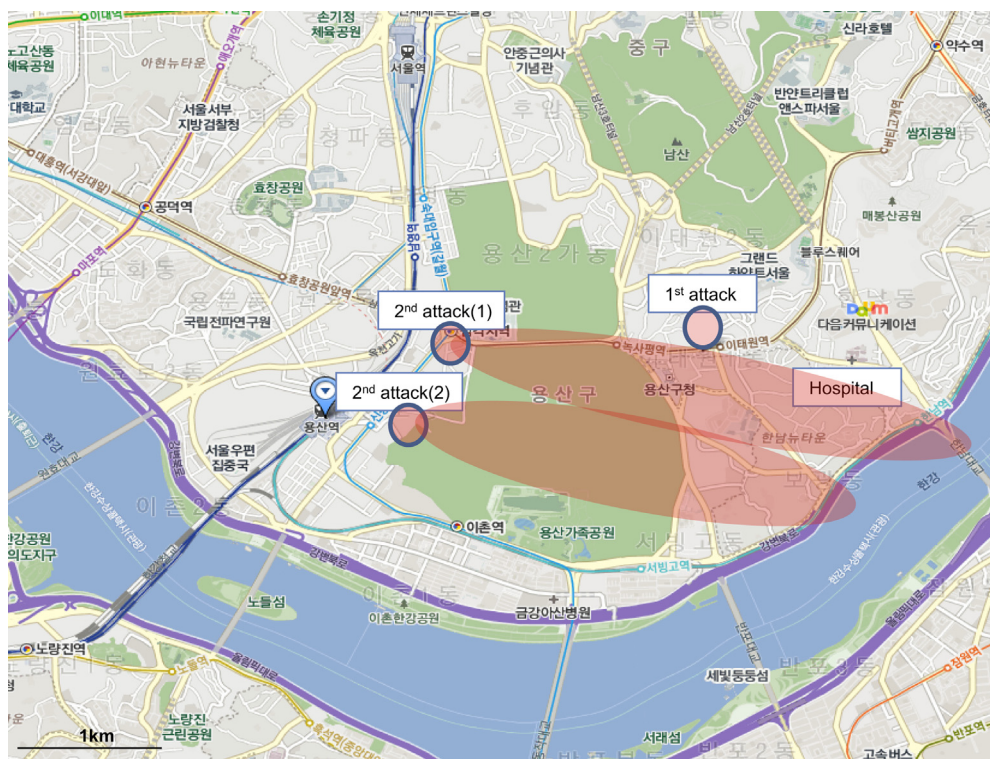


Figure 6. Able Response Exercise 13 attack scenario map.

3.1. Outcome of the exercise

Firstly, ROK and USA preparedness to biothreat was considerably improved since the first AR (May 2011), especially in terms of development of communication channels. Both countries discussed what procedures are necessary to root this partnership. Related agencies mutually visited and both CDCs and MND (DOD) tried to conduct joint research and development such as vaccination development. The meetings to prepare the exercise led to several more meetings and information sharing, which in turn fortified mutual collaboration between the two countries.

Secondly, participants evaluated the exercise elements and progress as realistic and the scenario gave deep consideration of biothreats in the Korean Peninsula. This exercise drew an important opinion that participating countries should develop strategic messages together prior to the real situation, and publish in

an appropriate time to the general public. Furthermore, new procedures and methods were searched for to give the right messages at the right time to the general public.

Thirdly, this exercise provided an opportunity to exercise each country's biosurveillance capability and consider a necessity of a biosurveillance portal. It is a comprehensive surveillance portal to collect not only medical but also environmental surveillance data and to detect natural or artificial bioaccidents as soon as possible. ROK MND and USA DOD plan to have a good collaboration for a project on a new ROK–USA biosurveillance portal.

3.2. Lessons learned

Not all the agencies in the biothreat manual were involved or participated in the exercise, so that maximum output of AR 13 could not be drawn. KCDC and MND actively led the exercise, but in reality, the



Figure 7. Senior Leadership Seminar.

two are not representative of the Korean government. Therefore, other related agencies should participate on the next exercise.

In the biothreat manual, some related agencies were missing and needed to be added in the revised manual [10]. Which ministry took charge of the situation and setup the control tower depending on the characteristic of attack (a biothreat or an infectious disease disaster) as different manuals and reporting systems were applied. For example, if numbers of acute respiratory syndrome patients were sharply increased, the bioterror response manual was applied if it was biothreat, whereas for infectious diseases causing pandemics such as influenza A (H1N1), the infectious disease response manual was applied.

There has been some achievement in coping with a biothreat, but more concrete international collaboration is necessary between ROK and USA. AR is a large-scale exercise, so it needs to find a method to draw more related agencies in both countries and to prepare the exercise all the year round.

4. Discussion and Conclusion

AR13 has considerably grown from AR 11 and become a model of international exercise on biothreat. This is an excellent example of interministerial, inter-agency cooperation.

Individual capability is improved through this exercise and AR has enhanced the comprehensive national countermeasure on biothreats. Furthermore, it has promoted international collaboration. AR 13 confirms the continuous improvement in both countries since AR 11. In particular, Australia observed the exercise and this gives a possibility to a multiparty joint exercise. The collaboration between participating agencies becomes concrete. For example, KCDC has almost joined US CDC's Laboratory Response Network and will get a more updated diagnosis protocol.

In conclusion, AR and its following actions will fortify collaboration between ROK and USA and enhance the capability to countermeasure biothreat in Korea.

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